

# REPORT ON MACHINERY.

No. 25947

Received at London Office

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Date of writing Report 17-12-1913 When handed in at Local Office 17-12-1913 Port of Sunderland

No. in Survey held at Sunderland Date, First Survey 4<sup>th</sup> Mar. 1913 Last Survey 16-12-1913  
Req. Book. (Number of Visits 45)

on the new steel 9/5 "WOLVERTON"

Master Built at Middlesbrough By whom built Sir Raylton Dixon & Co. (S.S. N<sup>o</sup> 584) When built 1914

Engines made at Sunderland By whom made George Blak Ltd (N<sup>o</sup> 994) when made 1914

Boilers made at Sunderland By whom made George Blak Ltd (N<sup>o</sup> 994) when made 1914

Registered Horse Power Owners Denaby & Badby Main Collieries Ltd. Port belonging to Hull

Nom. Horse Power as per Section 28 332 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 25"-40"-67" Length of Stroke 45 Revs. per minute 65 Dia. of Screw shaft as per rule 13.9" Material of screw shafts as fitted 14 1/8" Suspension

Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tight in the propeller boss Yes

If the liner is in more than one length are the joints burned Yes If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes

If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 4'-8 1/2"

Dia. of Tunnel shaft as per rule 12.35" Dia. of Crank shaft journals as per rule 12.97" Dia. of Crank pin 13" Size of Crank webs 8 1/2" x 19 1/2" Dia. of thrust shaft under collars 1 3/4" Dia. of screw 14.0" Pitch of Screw 16.6" No. of Blades 4 State whether moveable No Total surface 88 sq ft

No. of Feed pumps 2 Diameter of ditto 3 1/4" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 9 & 10 x 10 7 1/2 & 5 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 @ 3 1/2" In Holds, &c. N<sup>o</sup> 1 hold - 2 @ 3 1/2" N<sup>o</sup> 2 hold - 2 @ 3 1/2"

Deep tank - 2 @ 3 1/2" N<sup>o</sup> 3 hold - 2 @ 3 1/2" N<sup>o</sup> 4 hold - 2 @ 3 1/2" Tunnel well 1 @ 3 1/2"

No. of Bilge Injections 1 sizes 6 1/2" Connected to condenser, or to circulating pump P. Is a separate Donkey Suction fitted in Engine room & size Yes 5"

Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible None

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Above

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers Deep tank & forward hold suction How are they protected Under wood casing & liner boards

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Dates of examination of completion of fitting of Sea Connections 25.11.13 of Stern Tube 1-12-13 Screw shaft and Propeller 2-12-13

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Top platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spence & Sons Ltd & Rheinische Stahlwerke

Total Heating Surface of Boilers 5182 sq ft Is Forced Draft fitted No No. and Description of Boilers Three single ended marine

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 18-9-13 No. of Certificate 3148

Can each boiler be worked separately Yes Area of fire grate in each boiler 58 sq ft No. and Description of Safety Valves to each boiler two direct spring

Area of each valve 8.30" Pressure to which they are adjusted 185 Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 1'-6" Mean dia. of boilers 13'-9" Length 10'-6" Material of shell plates Steel

Thickness 1 1/16" Range of tensile strength 292-33 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams W.R.

long. seams OBS. TR Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7/16" Lap of plates or width of butt straps 1 1/8"

Per centages of strength of longitudinal joint rivets 88 plate 85.7 Working pressure of shell by rules 182 Size of manhole in shell 16" x 13"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 3'-6"

Length of plain part top 7 1/2" bottom 7 3/4" Thickness of plates crown 1 1/4" bottom 1 1/8" Description of longitudinal joint welded No. of strengthening rings 10 circular

Working pressure of furnace by the rules 184 Combustion chamber plates: Material steel Thickness: Sides 1 1/16" Back 1 1/16" Top 1 1/16" Bottom 7/16"

Pitch of stays to ditto: Sides 10 1/4" x 8 1/4" Back 9 1/2" x 9 1/2" Top 9 1/4" x 9 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180

Material of stays steel Diameter at smallest part 2.030" Area supported by each stay 89.60" Working pressure by rules 203 End plates in steam space:

Material steel Thickness 1 1/8" Pitch of stays 22 x 18 How are stays secured R.N. Working pressure by rules 182 Material of stays steel

Diameter at smallest part 5.930" Area supported by each stay 3330" Working pressure by rules 185 Material of Front plates at bottom steel

Thickness 1 3/16" Material of Lower back plate steel Thickness 29" Greatest pitch of stays 14 7/8" x 9 1/2" Working pressure of plate by rules 182

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates steel Thickness: Front 1 3/16" Back 3/4" Mean pitch of stays 10 1/8"

Pitch across wide water spaces 14 1/4" Working pressures by rules 195 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 208 1/2" x 7 1/8" Length as per rule 32" Distance apart 9 3/4" Number and pitch of stays in each 2 @ 9"

Working pressure by rules 182 Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked

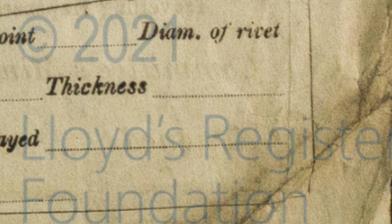
separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

2910-82M



**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No.	Description		When made	Where fixed
Made at	By whom made			
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment
If fitted with easing gear	If steam from main boilers can enter the donkey boiler		Dia. of donkey boiler	Length
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting long seams	
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint
Working pressure of furnace by rules	Thickness of furnace crown plates		Radius of do.	Stayed by
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey	

**SPARE GEAR.** State the articles supplied:— Two connecting rod top and bottom end bolts and nuts two main bearing bolts one set of coupling bolts one set of feed and bilge pump valves iron and bolts of various sizes one screw shaft and one propeller.

The foregoing is a correct description,  
**FOR GEORGE CLARK, LIMITED**  
 Manufacturer of Main Engine Boilers

Dates of Survey while building	During progress of work in shops --	1913. Mar 4. Apr 10. 17. 23. May 2. 24. Jun 12. Jul 24. 18. 28. 30. Aug 1. 12. 13. 18. 21.
	During erection on board vessel --	Sep 1. 2. 5. 6. 9. 12. 15. 18. 24. Oct 7. 9. 13. 27. 30. 31. Nov. 4. 5. 10. 28. Dec. 1. 2. 5. 8. 11. 16.
	Total No. of visits	45. Nov. 25. 1914 Jan 6.

Is the approved plan of main boiler forwarded herewith **yes**

<b>Dates of Examination of principal parts—</b>	Cylinders 1-9-13	Slides 9-10-13	Covers 9-10-13	Pistons 3-7-13	Rods 26-9-13
Connecting rods	29-9-13	Crank shaft 28-8-13	Thrust shaft 6-9-13	Tunnel shafts 5-9-13	Screw shaft 5-11-13
Propeller	21-8-13	Stern tube 4-11-13	Steam pipes tested 7-10-13 & 8-12-13	Engine and boiler seatings 25. 11. 13	Engines holding down bolts 8-12-13
Completion of pumping arrangements	6. 1. 14	Boilers fixed 8-12-13	Engines tried under steam 11-12-13		
Main boiler safety valves adjusted	11-12-13	Thickness of adjusting washers Port Blk. - Pistons 55/16 full. Centre Blk. 5/16. Slide Blk. 1/16			
Material of Crank shaft	Steel (5)	Identification Mark on Do. 8464 KH	Material of Thrust shaft	Steel	Identification Mark on Do. 5488 P
Material of Tunnel shafts	Steel	Identification Marks on Do. 4542 HK. 4503-4HK. 8455 KH.	Material of Screw shafts	Super Iron	Identification Marks on Do. 5782 M.
Material of Steam Pipes	Seamwelded steel 20 5/16" x 5/16" & 10 3/8" x 5/16"	Test pressure 540 lbs per sq. in.			

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

To complete the survey the after hold and tunnel sections require to be fitted. The electric lighting installation also requires to be completed. Vessel proceeding to Middlesbrough. Surveyors notified at that port.

The materials and workmanship are good. The machinery has been made under special survey and is eligible in our opinion for classification and the record + LMC 1. 14 (with date) when the survey is complete.

The Survey has now been satisfactorily completed as above required.

It is submitted that this vessel is eligible for **THE RECORD + LMC 1. 14.**

The amount of Entry Fee	£ 3 : : :	When applied for,
Special	£ 36 : 12 : :	21. 12. 13
Donkey Boiler Fee	£ : : :	When received,
Travelling Expenses (if any)	£ : : :	15. 1. 14

**Levis Shaws, J. Shaws & John Shaws**  
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUE. JAN. 20. 1914

Assigned

+ LMC 1. 14



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